

**Notice of Allowability**

Application No.

10/673,219

Applicant(s)

DIAO ET AL.

Examiner

Art Unit

Nghii H. Ly

2686

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 09/30/03.
2. ☒ The allowed claim(s) is/are 1-10.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other Maisha O Bank-Harold

MAISHA O. BANK-HAROLD  
SUPERVISOR, EXAMINER  
TECHNOLOGY CENTER 2000

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement filed 09/30/03 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Form 1449-PTO, document AK 1201355 fails to provide a legible copy of cited foreign patent document.

### **EXAMINER'S AMENDMENT**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Beddard, Cameron (Registration No. 46545) on 03/14/06.

#### **In claim 1:**

**Page 12, line 5,** the words "round-trip delay" have been inserted in front of the "RTD", and the "RTD" has been changed to (RTD).

**Page 12, line 9,** the words "time difference of arrival" have been inserted in front of the "TDOA", and the "TDOA" has been changed to (TDOA).

**Page 12, line 17**, the words "Non-Line-Of-Sight" have been inserted in front of the "NLOS", and the "NLOS" has been changed to (NLOS).

**In claim 4:**

**Page 14, line 5**, the words "Line-Of-Sight" have been inserted in front of the "LOS", and the "LOS" has been changed to (LOS).

**In claim 6:**

**Page 14, line 5**, the words "round-trip delay" have been inserted in front of the "RTD", and the "RTD" has been changed to (RTD).

**Page 14, line 22**, the words "time difference of arrival" have been inserted in front of the "TDOA", and the "TDOA" has been changed to (TDOA).

**In claim 9:**

**Page 16, line 5**, the words "round-trip delay" have been inserted in front of the "RTD", and the "RTD" has been changed to (RTD).

**Page 16, line 23**, the words "Line-Of-Sight" have been inserted in front of the "LOS" and the "LOS" has been changed to (LOS).

**Page 16, line 24**, the words "Non-Line-Of-Sight" have been inserted in front of the "NLOS", and the "NLOS" has been changed to (NLOS).

**REASONS FOR ALLOWANCE**

3. Claims 1-10 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claims 1, 6 and 9, Yokev et al (US 5,596,330) teaches a method for increasing accuracy for locating a cellular mobile station in an urban area (see Abstract), comprising the following steps:

1) determining whether there is any synchronous measurement request, and if yes, initiating the synchronous measuring management for an assistant locating apparatus (including opening and closing transmission of RTD measuring pilot frequency) (see column 2, lines 25-47 and column 25, lines 16-24), otherwise proceeding to the next step,

2) determining whether there is any locating request, and if yes, determining approximate location of the mobile station to be located with time of arrival, TDOA, and sector information of a base station (see column 4, line 60 to column 5, line 9), otherwise returning to step 1 (see column 2, lines 25-47 and column 25, lines 16-24).

Yokev fails to teach the following steps:

3) determining whether to open or close transmission of locating pilot frequency from an adjacent assistant locating apparatus according to the approximate location of the mobile station,

4) if an assistant locating pilot frequency is opened, measuring the TDOA again, and then determining whether the measurement for the mobile station to be located is finished, if yes, closing the transmission of the locating pilot frequency from the assistant locating apparatus; otherwise repeating the determination step,

5) searching for and processing multi-paths and identifying NLOS paths according to channel codes of the mobile station to be located, and requesting the assistant locating apparatus to report NLOS path identification result, and

6) estimating the location of the mobile station with the measurement of assistant pilot frequency signals and NLOS path identification result to obtain a more accurate location of the mobile station.

Dependent claims 2-5, 7, 8 and 10 are allowable for the same reason.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Hethuin (US 6,895,333) teaches high-precision 3D position-finding system.
- b. Hayakawa (US 6,973,316) teaches position detecting method and apparatus.
- c. Hunzinger (US 6,957,076) teaches location specific reminders for wireless mobiles.


Art Unit: 2686

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghi H. Ly whose telephone number is (571) 272-7911. The examiner can normally be reached on 8:30 am-5:30 pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nghi H. Ly



03/16/06